

### REMARKS

The present application was filed on November 21, 2003 with claims 1 through 20. Claims 1 through 20 are presently pending in the above-identified patent application.

In the Office Action, the Examiner rejected claims 1 and 8 under 35 U.S.C. §102(e) as being anticipated by Barker (United States Patent Number 6,571,516); rejected claims 3, 4, 10 and 11 under 35 U.S.C. §103(a) as being unpatentable over Barker in view of Beauducel et al. (United States Patent Number 4,352,070); rejected claims 6 and 12 under 35 U.S.C. §103(a) as being unpatentable over Barker in view of Mills et al. (United States Patent Number 5,172,117); rejected claims 2, 5, 9, 14 and 15 under 35 U.S.C. §103(a) as being unpatentable over Barker in view of Sandusky et al. (United States Patent Number 5,825,571); rejected claims 16, 17, 18 and 20 under 35 U.S.C. §103(a) as being unpatentable over Barker and Sandusky et al., and further in view of Beauducel et al.; and rejected claim 19 under 35 U.S.C. §103(a) as being unpatentable over Barker and Sandusky et al., and further in view of Mills et al.

The Examiner did not address the patentability of claims 7 and 13 in the Office Action.

#### Independent Claims 1, 8 and 14

Independent claims 1 and 8 were rejected under 35 U.S.C. §102(e) as being anticipated by Barker. In particular, the Examiner asserts that Barker discloses a sample and hold circuit. Among other features, the Examiner asserts that Barker also discloses (i) at least one capacitive element for retaining a charge, said at least one capacitive element connected to a node between said input and said output (citing capacitive element 81-1 as being connected through the positive input node and to switch 60-1); and (ii) at least one output switch for selectively connecting said at least one capacitive element to said output (citing Switch 16-1 of FIG. 2A as the output switch that is “connected to the output node of Capacitive element 80-1).

Interestingly, the Examiner switches between capacitive element **81-1** when discussing the first limitation and capacitive element **80-1** when discussing the second limitation. Meanwhile, the claim language in the second limitation clearly refers back to the same capacitive element as recited in the first limitation (“...for selectively connecting said at least one capacitive element to said output).

As explicitly required by claim 1, the capacitive element must be connected to a node between the input and output of the sample and hold circuit. While capacitive element **81-1** may arguably satisfy the first limitation, Barker does not disclose or suggest “at least one output switch for

selectively connecting said at least one capacitive element (81-1) to said output,” as required by the second limitation. The Examiner has asserted that the output switch 16-1 is connected to the output node of capacitive element **80-1**. Nonetheless, the output switch 16-1 does not selectively connect “said at least one capacitive element (**81-1**) to said output.” Rather, output switch 16-1 provides selective feedback of the output of amplifier 70-1 to the negative input terminal of amplifier OTA 11.

There is no output switch in Barker that selectively connects the capacitive element 81-1 to the output ( $V_{out1}$ ).

Thus, Barker does not disclose or suggest “at least one output switch for selectively connecting said at least one capacitive element to said output,” as required by each independent claim. In addition, as recognized by the Examiner, Barker does not disclose or suggest “a magneto-resistive read head,” as further required by independent claim 14.

Applicants can also find no teaching of “at least one output switch for selectively connecting said at least one capacitive element to said output,” in any of the additional cited references (Beauducel et al., Mills et al. or Sandusky et al.) and such a teaching in these additional cited references has not been asserted by the Examiner.

#### Dependent Claims 2-7, 9-13 and 15-20

Dependent claims 2-6, 9-12, and 15-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Horie et al. in view of one or more of Beauducel et al., Mills et al. and Sandusky et al. Claims 2-7, 9-13, and 15-20 are dependent on claims 1, 8, and 14, respectively, and are therefore patentably distinguished over Horie et al., Beauducel et al., Mills et al. and Sandusky et al., alone or in combination, because of their dependency from independent claims 1, 8, and 14 for the reasons set forth above, as well as other elements these claims add in combination to their base claim.

For example, claims 3, 10 and 16 require that at least one of the input and output switches has a leakage effect represented by a resistor in *parallel* with the input or output switch and a voltage drop across the resistor is limited to the offset voltage. The Examiner asserts that FIG. 4 of Beauducel et al. teaches a resistor,  $R_1$ , placed in parallel. Applicants note, however, that resistor,  $R_1$ , is in *series* with the current through switch  $I_1$ . If the switch  $I_1$  is in an open position, there is no current from the amplifier  $A_1$  through the resistor  $R_1$ .

The Examiner did not address the patentability of claims 7 and 13 in the Office Action.

All of the pending claims, i.e., claims 1-20, are in condition for allowance and such

favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully,



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